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EXAMINER

SISSON, BRADLEY L

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HAN CAO, JONAS O. TEGENFELDT,
STEPHEN CHOU, and ROBERT H. AUSTIN¹

Appeal 2016-001740
Application 13/675,685
Technology Center 1600

Before MELANIE L. MCCOLLUM, RICHARD J. SMITH, and
RYAN H. FLAX, *Administrative Patent Judges*.

FLAX, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) involving claims directed to a method of analyzing at least one macromolecule. Claims 1–10 and 13–22 are on appeal as rejected under 35 U.S.C. § 101, § 102(e), § 112, second paragraph, and on the ground of non-statutory obviousness type double patenting. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ We understand the Real Party in Interest to be Princeton University. App. Br. 3.

STATEMENT OF THE CASE

The Specification² discloses, “[t]he present invention relates to bionanotechnology and in particular to a method of fabricating a hybrid microfluidic/nanofluidic device having a gradient structure formed by a modified photolithography technique at the interface between microfluidic and nanofluidic portions of the device and uses thereof.” Spec. 1:21–24. “Diffraction gradient lithography (DGL) is used to form a gradient interface between a microfluidic area and a nanofluidic area. The gradient interface area reduces the local entropic barrier to nanochannels formed in the nanofluidic area.” *Id.* 3:23–25. “The gradient structures can be used to squeeze and funnel biomolecules into a small nanofluidic area.” *Id.* 3:30–31. The Specification discloses that such a structure can be used for analysis of a sample, where a signal can be acquired, and “[t]he signal can be a photon, electrical current/impedance measurement or change in measurements.” Spec. 4:17–23.

The appealed claims can be found in the Claims Appendix of the Appeal Brief. Claims 1, 15, and 22 are independent claims; claim 1 is representative and reads as follows:

1. A method of analyzing at least one macromolecule, comprising the steps of:

providing a surface having a nanofluidic area formed of at least one channel in the material of the surface;

a microfluidic area on said surface; and

² References to the Specification (Spec.) herein are directed to the version submitted February 12, 2013.

a gradient interface area between said nanofluidic area and said microfluidic area;

introducing a sample into the microfluidic area, said sample comprising at least one macromolecule;

transporting the at least one macromolecule between said microfluidic area and said nanofluidic area to elongate said at least one macromolecule;

detecting at least one signal transmitted from the at least one elongated macromolecule; and

correlating the at least one detected signal to at least one property of the at least one macromolecule.

App. Br. 51 (Claims App'x).

The following rejections are on appeal³:

Claims 1–10 and 13–22 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Final Action 2.

Claims 1–10 and 13–22 stand rejected under 35 U.S.C. § 101 as directed to patent ineligible subject matter (i.e., a law of nature, a natural phenomenon, or an abstract idea, without significantly more). *Id.* at 26.

Claims 1–10 and 13–22 stand rejected under 35 U.S.C. § 102(e) as anticipated by Chou.⁴ *Id.* at 30.

Claims 1–10 and 13–22 stand rejected on the ground of non-statutory obviousness type double patenting over the claims of Chou. *Id.* at 35.

³ The Examiner has withdrawn rejections under 35 U.S.C. § 112, first paragraph, § 101 (utility), § 102(f), and under the doctrine of non-statutory obviousness type double patenting (provisional rejection). Ans. 12–13.

⁴ U.S. Patent No. 7,670,770 B2 (issued to Chou et al. on Mar. 2, 2010) (hereinafter “Chou”).

DISCUSSION

INDEFINITENESS

“[A] claim is indefinite when it contains words or phrases whose meaning is unclear,” i.e., “ambiguous, vague, incoherent, opaque, or otherwise unclear in describing and defining the claimed invention.” *In re Packard*, 751 F.3d 1307, 1310–13 (Fed. Cir. 2014); *see also* MPEP § 2173.02(I) (Rev. 07.2015, Nov. 2015) (advising examiners that a rejection for indefiniteness is appropriate “after applying the broadest reasonable interpretation to the claim, if the metes and bounds of the claimed invention are not clear”). We ask whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the Specification. *Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1350 (Fed. Cir. 2010).

[A]s an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary [plain] usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.

In re Morris, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Also, terms of degree are not per se indefinite.

Such broadening usages as “about” must be given reasonable scope; they must be viewed by the decisionmaker as they would be understood by persons experienced in the field of the invention. Although it is rarely feasible to attach a precise limit to [terms of degree, e.g.,] “about,” the usage can usually be understood in light of the technology embodied in the invention.

Modine Manufacturing Co. v. U.S. ITC, 75 F.3d 1545, 1554 (Fed. Cir. 1996) (internal quotation marks omitted). The fact that “some claim language may not be precise . . . does not automatically render a claim invalid. When a word of degree is used the district court [or examiner] must determine whether the patent’s specification provides some standard for measuring that degree.” *Seattle Box Co. v. Indus. Crating & Packaging, Inc.*, 731 F.2d 818, 826 (Fed. Cir. 1984). We note the MPEP § 2173.01(III)(B) [Rev. R-07.2015, Nov. 2015] indicates patent applicants may refer to an art-recognized dictionary to provide a definition for a disputed claim term.

The Examiner determined that the term “macromolecule” used in claims 1–7, 15–19, 21, and 22 is a relative term and is indefinite as not defined by the claims or the Specification and the term does not have a single, art-recognized definition. Final Action 2–3. The Examiner identifies that there are multiple potential definitions for the term and this ambiguity has not been resolved by Appellants. Final Action 4.

Appellants argue (App. Br. 10–11) “macromolecule” is a well understood term and should be accorded its plain meaning, as evidence for which Appellants cite to the following two dictionary definitions:

Merriam-Webster — “a very large molecule (as of a protein or rubber)”;⁵ and

⁵ Merriam-Webster, *macromolecule*, available at <http://www.merriam-webster.com/dictionary/macromolecule> (visited Mar. 17, 2017).

Dictionary.com — “a very large molecule, as a colloidal particle, protein, or especially a polymer, composed of hundreds or thousands of atoms.”⁶

Appellants also point (App. Br. 11) to the Specification, which identifies examples of macromolecules as including “biopolymers such as a protein, a polypeptide, and a nucleic acid such as RNA or DNA or PNA” and polymers. Spec. 15:2–4 (corresponding to the published application’s ¶ 74), 14:1 (corresponding to the published application’s ¶ 69). Looking to the Specification, we also note it discloses, “[i]n one embodiment of the present invention, the method of analyzing a macromolecule measures the length of macromolecules having an elongated length of greater than 150 nanometers.” Spec. 15:11–13.

We find Appellants have the better position. We find the skilled artisan would understand the term “macromolecule,” in accordance with the above-referenced dictionary definitions and, likewise, in view of the Specification, to mean a very large molecule, such as a protein, e.g., one having a “length of greater than 150 nanometers,” which comports with the plain meaning.

The Examiner determined that the term “synthetic” used in claims 3–6 and 16–18 is indefinite because it is not clear how it defines a material difference to a polymer (e.g., DNA is a polymer that occurs in nature). Final Action 3. The Examiner did not accept Appellants’ contention that the term

⁶ Dictionary.com, *macromolecule*, available at <http://dictionary.reference.com/browse/macromolecule> (visited Mar. 17, 2017).

should have its plain meaning because it amounted to mere attorney argument. Final Action 4–5.

Similar to their argument regarding “macromolecule,” Appellants argue (App. Br. 11–12) “synthetic” is a common word with a dictionary definition, which is: “noting or pertaining to compounds formed through a chemical process by human agency, as opposed to those of natural origin: *synthetic vitamins; synthetic fiber.*”⁷ In view of this, Appellants contend the skilled artisan “would have no difficulty in understanding” the term. *Id.* at 12.

We find Appellants have the better position. We find the skilled artisan would understand the term “synthetic” in accordance with the definition identified by Appellants, which comports with the plain meaning.

The Examiner determined the term “substantially unfolded” used in claim 6 is a relative term and is indefinite as not defined by the claims or the Specification. Final Action 3. The Examiner did not accept Appellants’ contention that the term should have its plain meaning because it amounted to mere attorney argument. Final Action 5.

Appellants argue the words “substantially” and “unfolded” are each well understood and discernable terms not needing explanation and, in using the term “substantially unfolded,” the claims invoke the plain meaning. App. Br. 12. Appellants contend the skilled artisan “would have no difficulty in understanding” the terms. *Id.*

⁷ Dictionary.com, *synthetic*, available at <http://dictionary.reference.com/browse/synthetic> (visited Mar. 17, 2017).

We find Appellants have the better position. We understand the plain meaning of “substantially” corresponds to “to a great or significant extent” or “for the most part; essentially,”⁸ and the plain meaning of “unfolded” corresponds to “not folded.”⁹ We find the skilled artisan would understand the term “substantially unfolded” in accordance with its plain meaning.

The Examiner determined the term “progressively smaller” used in claim 21 is a relative term and is indefinite as not defined by the claim or the Specification. Final Action 3. The Examiner did not accept the Appellants’ contention that the term should have its plain meaning because it amounted to mere attorney argument. Final Action 5–6.

Appellants argue the words “progressively” and “smaller” are each well understood and discernable terms not needing explanation and, in using the term “progressively smaller,” the claims invoke the plain meaning. App. Br. 12. Appellants contend the skilled artisan “would have no difficulty in understanding” the terms. *Id.*

We find Appellants have the better position. We find the plain meaning of “progressively” corresponds to “increasing in extent or severity”¹⁰ and the plain meaning of “smaller”¹¹ corresponds to “having

⁸ Oxford Dictionary, *substantially*, available at <https://en.oxforddictionaries.com/definition/substantially> (visited Mar. 20, 2017).

⁹ Merriam-Webster Dictionary, *unfolded*, available at <https://www.merriam-webster.com/dictionary/unfolded> (visited Mar. 20, 2017).

¹⁰ Merriam-Webster Dictionary, *progressive*, available at <https://www.merriam-webster.com/dictionary/progressively> (visited Mar. 20, 2017).

¹¹ Merriam-Webster Dictionary, *small*, available at <https://www.merriam-webster.com/dictionary/smaller> (visited Mar. 20, 2017).

comparatively little size or slight dimensions” as compared to something else. We find the skilled artisan would understand the term “progressively smaller” in accordance with its plain meaning.

The Examiner determined the term “partially coiled” used in claim 22 is indefinite because one cannot determine its metes and bounds. Final Action 3.

Appellants argue the words “partially” and “coiled” are each well understood and discernable terms not needing explanation and in using the term “partially coiled” the claims invoke the plain and ordinary meaning. App. Br. 13. Appellants contend the skilled artisan “would have no difficulty in understanding” this term. *Id.*

We find Appellants have the better position. We find the plain meaning of “partially” corresponds to “to some extent : in some degree”¹² and the plain meaning of “coiled” corresponds to describing the state of something as being in “a series of loops.”¹³ We find the skilled artisan would understand the term “partially coiled” in accordance with its plain meaning.

For the reasons above, we find the disputed claim language is not ambiguous, vague, incoherent, opaque, or otherwise unclear in describing and defining the claimed invention and, so, we reverse the indefiniteness rejection.

¹² Merriam-Webster Dictionary, *partially*, available at <https://www.merriam-webster.com/dictionary/partially> (visited Mar. 20, 2017).

¹³ Merriam-Webster Dictionary, *coil*, available at <https://www.merriam-webster.com/dictionary/coiled> (visited Mar. 20, 2017).

PATENT ELIGIBILITY

The Examiner determined claims 1–10 and 13–22 are directed to an abstract idea, here mere mental steps (“detecting” and “correlating” information, akin to reading a report and making a determination), and do not recite additional elements sufficient to amount to “significantly more” so as to transform the claims to cover patent eligible subject matter. Final Action 26. The Examiner noted that claim 1 recites a “surface,” claim 15 recites a “chip,” and claim 22 recites a “device” — we note, each of these structures has a nanofluidic area in communication with a microfluidic area with a gradient interface therebetween. *Id.* at 26–27. The Examiner also identified that claim 1 also recites steps such as transporting a macromolecule between areas to elongate it and detecting a signal transmitted from a macromolecule. *Id.* The Examiner determined concepts such as these recited structures and steps to be well understood and routine in the relevant art so as not to transform the claimed invention to be patent eligible. *Id.* (citing Chou as teaching these “routine” concepts).

In analyzing patent eligibility questions under 35 U.S.C. § 101, the Supreme Court instructs us to “first determine whether the claims at issue are directed to a patent-ineligible concept.” *Alice Corp. Pty Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). However, the Supreme Court “has not established a definitive rule to determine what constitutes an ‘abstract idea’” for the purposes of step one. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (citing *Alice*, 134 S. Ct at 2357). If this initial threshold is met, we then move to a second step of the inquiry and “consider the elements of each claim both individually and ‘as an ordered

combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1297 (2012)).

Taking up the first step of the patent-eligibility analysis, we find claim 1 is not directed to an abstract idea. Per the Supreme Court’s holding in *Diehr*, claims are patent eligible under § 101 “when a claim containing a mathematical formula [or mental processes] implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect.” *Diamond v. Diehr*, 450 U.S. 175, 192 (1981). In terms of the *Alice* test, the *Diehr* claims were directed to an improvement in the rubber curing process, not a mathematical formula or mental process and, so, not an abstract idea. *See Thales Visionix Inc. v. United States*, --- F.3d ---, 2017 WL 914618 *3 (Fed. Cir. Mar. 8, 2017).

Just as the claims in *Diehr* reduced the likelihood that a rubber molding process would result in “overcuring” or “undercuring,” *see Diehr* at 187, Appellants’ claims result in a method that improves analysis of macromolecules, e.g., proteins or DNA, by providing and using an improved substrate for doing so that more effectively transports, orients, and positions the macromolecule for such analysis. Such a method is not directed merely to an abstract idea, e.g., mental steps, but is directed to an improvement in how macromolecules are analyzed.

Because we find the claims are not directed to an abstract idea, we need not proceed to step two. *Alice*, 134 S.Ct. at 2355; *see also Enfish*, 822 F.3d at 1339. The claims are patent eligible under 35 U.S.C. § 101.

ANTICIPATION

We find the Examiner has not established that the claims are anticipated by Chou. Appellants argue Chou does not teach providing a surface comprising a gradient interface area between a nanofluidic area and a microfluidic area, as recited by claim 1. App. Br. 42–44. We agree.

The Examiner determined “[t]he area where the channel goes from microfluidic to nanofluidic is deemed to meet the requirement of a ‘gradient’.” Final Action 30. In acknowledging Appellants’ argument that Chou does not disclose the recited “gradient interface area,” the Examiner points to Chou at col. 17:26–37 (Example 7), which states (emphasis added):

This example shows how ***a nanochannel array can be prepared from a substrate having a plurality channels larger than 150 nm wide by 150 nm deep.*** A substrate is prepared by photolithography techniques to ***provide a plurality of channels with width of greater than 1.5 micron using conventional optical lithography techniques:*** Contact aligner such as Karl Suss MA-6 to provide a pattern resolution at low micron level; Industrial projection stepper. The angle of the incident depositing beam of sealing material is varied to ***reduce the trench width and height*** to less than 150 nm and 150 nm, respectively, and to substantially seal ***by providing shallow tangential deposition angles.***

See Ans. 22–23. The Examiner determined that this disclosure of varying the angle of material deposition creates a gradient. *Id.* 23. The Examiner is

not interpreting this disclosure correctly in view of the disputed claim element.

In the portion of Chou reproduced above, the reference disclosed how one of skill can narrow its otherwise-disclosed nanochannels, which, when initially formed are more than a micron wide. Here, Chou is not disclosing forming a gradient interface area *between* the nanochannels and a microfluidic area, which is the disputed claim element. Thus, the Examiner has not identified how Chou disclosed each and every claim element and Appellants have the better position.

DOUBLE PATENTING

Appellants argue “Chou does not teach, suggest, or claim a method comprising providing a surface comprising a gradient interface area between a nanofluidic area and a microfluidic area.” App. Br. 48. We agree with Appellants to the extent Chou’s claims do not recite a microfluidic area or a gradient interface area between a nanofluidic area and a microfluidic area; and also do not recite introducing a sample into a microfluidic area or transporting a macromolecule between a microfluidic area and a nanofluidic area. *See* Chou claim 1 *et seq.*

Obviousness-type double patenting entails a two-step analysis. First, the allegedly conflicting claims are construed and, second, the difference(s) between the claims are considered to determine whether the claims are patentably distinct. *See Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 968 (Fed. Cir. 2001). “A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the

earlier claim.” *Id.* Here, as we noted above, Appellants’ claims recite subject matter not recited in Chou’s claims, thus, the scope of the respective claims is not the same. We find the aforementioned elements of Appellants’ claims not recited by Chou’s claims would not have been obvious in view of the claims of Chou.

SUMMARY

The rejection of claims 1–10 and 13–22 under 35 U.S.C. § 112, second paragraph, as indefinite, is reversed.

The rejection of claims 1–10 and 13–22 under 35 U.S.C. § 101 as directed to patent ineligible subject matter is reversed.

The rejection of claims 1–10 and 13–22 under 35 U.S.C. § 102(e) as anticipated by Chou is reversed.

The rejection of claims 1–10 and 13–22 on the ground of non-statutory obviousness type double patenting over the claims of Chou is reversed.

REVERSED

<i>Notice of References Cited</i>	Application/Control No. 13/675,685	Applicant(s)/Patent Under Patent Appeal No. 2016-001740	
	Examiner	Art Unit 1600	Page 1 of 1

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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Merriam-Webster Dictionary, coil, available at https://www.merriam-webster.com/dictionary/coiled (visited Mar. 20, 2017).
	V	Merriam-Webster Dictionary, progressive, available at https://www.merriam-webster.com/dictionary/progressively (visited Mar. 20, 2017).
	W	Merriam-Webster Dictionary, small, available at https://www.merriam-webster.com/dictionary/smaller (visited Mar. 20, 2017).
	X	Oxford Dictionary, substantially, available at https://en.oxforddictionaries.com/definition/substantially (visited Mar. 20, 2017).

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	Examiner	Art Unit 1600	Page 1 of 1

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	U	Merriam-Webster Dictionary, unfolded, available at https://www.merriam-webster.com/dictionary/unfolded (visited Mar. 20, 2017).
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1

coil

[play](#)

noun \ˈkɔɪ(-ə)l\

Popularity: Bottom 40% of words

[Examples: coil in a sentence](#)

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Definition of *coil*

1. *I* : [turmoil](#)
2. *2* : [trouble](#); *also* : everyday cares and worries *when we have shuffled off this mortal coil* — William Shakespeare

Origin and Etymology of *coil*

origin unknown

First Known Use: 1567

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2

coil

[verb](#)

Definition of *coil*

1. [transitive verb](#)
1. *I* : to wind into rings or spirals *coil a rope*
2. *2* : to roll or twist into a shape resembling a coil *coiled herself up on the couch*
4. [intransitive verb](#)
1. *I* : to move in a circular or spiral course
2. *2* : to form or lie in a coil

coilability

[play](#) \,kɔɪ-lə-'bi-lə-tē\ *noun*

See [coil](#) defined for English-language learners

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Examples of *coil* in a sentence

1. She *coiled* the loose thread around her finger.
2. A long scarf was *coiled* around her neck.
3. The cat *coiled* up into a ball.
4. The snake *coiled* around its prey.

Origin and Etymology of *coil*

French *coillir*, *cuillir* to gather — more at [cull](#)

First Known Use: 1611

coil Synonyms

Synonyms

[wind](#), [corkscrew](#), [curl](#), [entwine](#), [spiral](#), [twine](#), [twist](#)

Related Words

[arc](#), [arch](#), [bend](#), [crook](#), [curve](#), [hook](#), [sweep](#), [swerve](#), [turn](#), [veer](#), [wheel](#); [swirl](#), [whirl](#); [circle](#), [encircle](#), [loop](#); [enlace](#), [interlace](#), [intertwine](#), [lace](#); [bow](#), [bulge](#); [meander](#), [weave](#), [zigzag](#)

Near Antonyms

[straighten](#)

3

coil

noun

Definition of *coil*

1. *1a* (1) : a series of loops (2) : [spiral](#) *b* : a single loop of such a coil
2. *2a* : a number of turns of wire wound around a core (as of iron) to create a magnetic field for an electromagnet or an induction coil *b* : [induction coil](#)

3. 3 : a series of connected pipes in rows, layers, or windings

4. 4 : a roll of postage stamps; *also* : a stamp from such a roll

1661

First Known Use of *coil*

1661

Other Electrical Engineering Terms

feedback, fuse, incandescent, noise, resonance

COIL Defined for English Language Learners

2

coil

verb

Definition of *coil* for English Language Learners

- : to wind (something) into circles
-

COIL Defined for Kids

1

coil

play

noun \ 'kôil \

Definition of *coil* for Students

1. 1 : a circle, a series of circles, or a spiral made by coiling

2. 2 : a long thin piece of material that is wound into circles

2

coil

play
verb

Definition of *coil* for Students

coiled

;

coiling

1. *l* : to wind into rings or a spiral *coil a rope*
2. *l* : to form or lie in a coil *The cat coiled up before the fireplace.*

Medical Dictionary

coil

play
noun \ˈkɔɪ(ə)l\

Medical Definition of *coil*


1. : intrauterine device

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1

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[adjective](#) pro·gres·sive \prə-'gre-siv\

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-

Definition of *progressive*

1. *1a* : of, relating to, or characterized by progress*b* : making use of or interested in new ideas, findings, or opportunities*c* : of, relating to, or constituting an educational theory marked by emphasis on the individual child, informality of classroom procedure, and encouragement of self-expression
2. *2* : of, relating to, or characterized by progression
3. *3* : moving forward or onward : advancing
4. *4a* : increasing in extent or severity *a progressive disease**b* : increasing in rate as the base increases *a progressive tax*
5. *5 often capitalized* : of or relating to political Progressives
6. *6* : of, relating to, or constituting a verb form that expresses action or state in progress at the time of speaking or a time spoken of
7. *7* : of, relating to, or being a multifocal lens with a gradual transition between focal lengths *progressive bifocals*
8. *8* : or, relating to, or using a method of video scanning (as for television or a computer monitor) in which the horizontal lines of each frame are drawn successively from top to bottom — compare interlaced

progressively

adverb

progressiveness

noun

See *progressive* defined for English-language learners

See *progressive* defined for kids

Related to *progressive*



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Examples of *progressive* in a sentence

1. the *progressive* movements of the hands of a clock
2. <*progressive* forms of animal life>



14th Century

First Known Use of *progressive*

14th century

progressive Synonyms

Synonyms

developed, evolved, forward, high, higher, improved, late, advanced, refined

Antonyms

backward, low, lower, nonprogressive, primitive, retarded, rude, rudimentary, undeveloped

Related Words

precocious; full-blown, full-fledged, full-scale; aged, grown, mature, matured, perfected, ripe, ripened; civilized, educated, enhanced, enlightened; contemporary, current, cutting-edge, latest, leading-edge, mod, modern, new, newest, newfangled, new-fashioned, novel, now, present-day, recent, space-age, supermodern, ultramodern, up-to-date

Near Antonyms

green, immature, underdeveloped, undersized (*also* undersize), underweight, unripe, unripened; savage, uncivilized, uneducated; early, embryonic, germinal, primeval, primordial; antediluvian, antiquated, antique, dated, fusty, hoary, musty, Neanderthal (*or* Neandertal), obsolete, old, oldfangled, old-fashioned, old-time, out-of-date, outworn, passé, past

2

progressive

noun pro·gres·sive

Definition of *progressive*

1. *Ia* : one that is progressive *b* : one believing in moderate political change and especially social improvement by governmental action
2. *capitalized* : a member of any of various U.S. political parties: such as *a* : a member of a predominantly agrarian minor party that around 1912 split off from the Republicans; *specifically* : bull moose *b* : a follower of Robert M. La Follette in the presidential campaign of 1924 *c* : a follower of Henry A. Wallace in the presidential campaign of 1948

See *progressive* defined for English-language learners

Examples of *progressive* in a sentence

1. “Believe” is never used in *the progressive*.

1844

First Known Use of *progressive*

1844

Phrases related to PROGRESSIVE

Related Phrases

- progressive tense
- the progressive

PROGRESSIVE Defined for English Language Learners

1

progressive

play

adjective pro·gres·sive \prə-'gre-siv\

Definition of *progressive* for English Language Learners

- : moving forward
- : happening or developing gradually over a period of time
- : using or interested in new or modern ideas especially in politics and education

progressive

noun pro·gres·sive

Definition of *progressive* for English Language Learners

- : a person who favors new or modern ideas especially in politics and education
-

PROGRESSIVE Defined for Kids

progressive

play

adjective pro·gres·sive \prə-'gre-siv\

Definition of *progressive* for Students

1. *1* : of, relating to, or showing advancement *a progressive city*
2. *2* : taking place gradually or step by step *a progressive disease*
3. *3* : favoring gradual political change and social improvement by action of the government

progressively

adverb

Medical Dictionary

progressive

play

adjective pro·gres·sive \prə-'gres-iv\

Medical Definition of *progressive*

1. *1* : increasing in extent or severity *a progressive disease*
2. *2* : of, relating to, or being a multifocal lens with a gradual transition between focal lengths *progressive bifocals*

progressively

adverb

Law Dictionary

progressive

adjective pro·gres·sive

Legal Definition of *progressive*

1. : increasing in rate as the base increases *a progressive tax*
-

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1. See words that rhyme with *progressive* Thesaurus: All synonyms and antonyms for *progressive* Spanish Central: Translation of *progressive* Nglsh: Translation of *progressive* for Spanish speakers Britannica English: Translation of *progressive* for Arabic speakers
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WORD OF THE DAY

hackle

play

a hair or feather on the neck

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programming

programming language

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1

small

[play](#)

[adjective](#) \ 'smɒl \

Popularity: Top 40% of words

[Examples: small in a sentence](#) ▼

[Tip: Synonym guide](#) ▼

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- [Writing? Check your grammar now!](#)

-

Definition of *small*

1. *1a* : having comparatively little size or slight dimensions *b* : [lowercase](#)
2. *2a* : minor in influence, power, or rank *b* : operating on a limited scale
3. *3* : lacking in strength *a small voice*
4. *4a* : little or close to zero in an objectively measurable aspect (as quantity) *b* : made up of few or little units
5. *5a* : of little consequence : [trivial](#) *b* : [humble](#), [modest](#)
6. *6* : limited in degree
7. *7a* : [mean](#), [petty](#) *b* : reduced to a humiliating position

smallish

[play](#) \'smò-lish\ *adjective*

smallness

[play](#) \'smòl-nəs\ *noun*

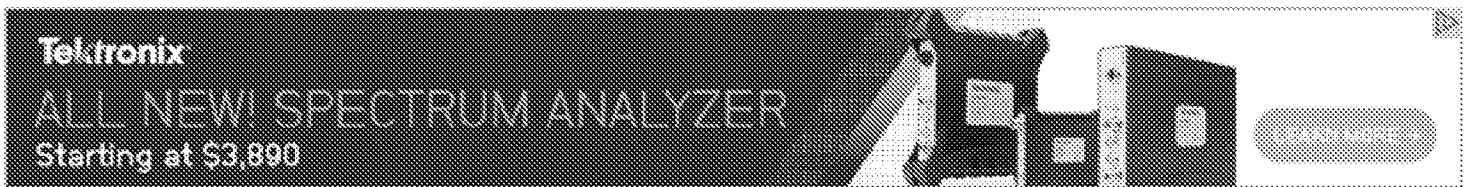
See [small](#) defined for English-language learners

See [small](#) defined for kids

Examples of *small* in a sentence

1. They live in a *small* house.
2. a *small* glass of soda
3. She moved to a *smaller* town.
4. The toy is *small* enough to fit in my pocket.
5. This room is a little *smaller* than that one.
6. The movie was a *small* success.
7. There are still a few *small* details we have to deal with.
8. It's only a *small* mistake.

9. The change had only a *small* impact on the community.



Origin and Etymology of *small*

Middle English *smal*, from Old English *smæl*; akin to Old High German *smal* small, Greek *mēlon* small domestic animal

First Known Use: before 12th century

small Synonyms

Synonyms

bantam, diminutive, dinky, dwarfish, fine, half-pint, Lilliputian, little, pint-size (*or* pint-sized), pocket, pocket-size (*also* pocket-sized), puny, pygmy, shrimpy, slight, smallish, subnormal, toylike, undersized (*also* undersize)

Antonyms

big, biggish, considerable, goodly, grand, great, handsome, husky, king-size (*or* king-sized), large, largish, outsize (*also* outsized), overscale (*or* overscaled), oversize (*or* oversized), sizable (*or* sizeable), substantial, tidy, whacking, whopping

Related Words

dwarf, toy; runtish, runty, scrubby, stunted; bitty, inappreciable, infinitesimal, little bitty, micro, microscopic (*also* microscopical), mini, miniature, miniaturized, minikin, minim, minuscule, minute, pinpoint, teensy, teensy-weensy, teeny, teeny-weeny, tiny, wee, weeny (*also* weensy); meager (*or* meagre), niggardly, poor, scant, scanty, scarce, skimp, skimpy, slender, slim, spare, sparse, stingy; deficient, inadequate, insufficient, lacking, wanting; bite-size (*also* bite-sized), capsule

Near Antonyms

bulky, hefty, hulking, massive, voluminous; boxcar, Brobdignagian, Bunyanesque, cavernous, colossal, cyclopean, elephantine, enormous, galactic, gargantuan, giant, gigantic, gross, Himalayan, herculean, heroic (*also* heroical), huge, humongous (*also* humungous), immense, jumbo, leviathan, mammoth, monolithic, monstrous, monumental, mountainous, pharaonic, prodigious, staggering, stupendous, titanic, tremendous, vast; abundant, ample, appreciable, bountiful, copious, generous, healthy, liberal, plenteous, plentiful; fat, thick; broad, wide; boundless, cosmic (*also* cosmical), immeasurable, incalculable, infinite; adequate, enough, sufficient

Synonym Discussion of *small*

small, little, diminutive, minute, tiny, miniature mean noticeably below average in size. small and little are often interchangeable, but small applies more to relative size determined by capacity, value, number (*a relatively small backyard*). little is more absolute in implication often carrying the idea of petiteness, pettiness, insignificance, or immaturity (*your pathetic little smile*). diminutive implies abnormal smallness (*diminutive bonsai plants*). minute implies extreme smallness (*a minute amount of caffeine in the soda*). tiny is an informal equivalent to minute (*tiny cracks formed in the painting*). miniature applies to an exactly proportioned reproduction on a very small scale (*a dollhouse with miniature furnishings*).

2

small

adverb

Definition of *small*

1. *l* : in or into small pieces
2. *2* : without force or loudness *speaking as small as you will* — William Shakespeare
3. *3* : in a small manner

Before 12th Century

First Known Use of *small*

before 12th century

3

small

noun

Definition of *small*

1. *l* : a part smaller and especially narrower than the remainder *the small of the back*
2. *2a* **small**s plural : small-sized products *b* **small**s plural, chiefly British : smallclothes; especially : underwear

See *small* defined for English-language learners

Examples of *small* in a sentence

1. These shirts are all *small*s.
2. “What size ice-cream cones do you want?” “We’ll take three larges and a *small*.”

15th Century

First Known Use of *small*

15th century

SMALL Defined for English Language Learners

1

small

play

adjective \ 'smɒl \

Definition of *small* for English Language Learners

- : little in size
 - : few in number or little in amount
 - : not very important
-

3

small

noun

Definition of *small* for English Language Learners

- : something that is sold in a small size : something that is smaller than other things of the same kind
-

SMALL Defined for Kids

1

small

play

adjective \ 'smɒl \

Definition of *small* for Students

smaller

;

smallest

1. *1* : little in size *a small house*
2. *2* : few in numbers or members *a small crowd*
3. *3* : little in amount *a small supply*
4. *4* : very young *a small child*
5. *5* : not very much *small success*
6. *6* : unimportant *There are some small details to work out.*
7. *7* : operating on a limited scale *small car dealers*
8. *8* : very soft and quiet *a small voice*
9. *9* : not generous : mean
10. *10* : made up of units of little worth *small change*
11. *11* : ¹humble 3, modest *She came from a small beginning.*
12. *12* : lowered in pride *After fumbling the ball, I felt pretty small.*
13. *13* : being letters that are not capitals

smallness

noun

2

small

play

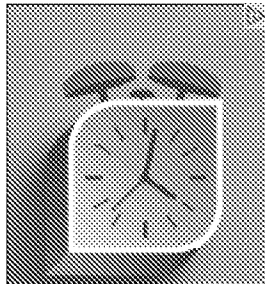
noun

Definition of *small* for Students

1. : a part smaller and usually narrower than the rest *the small of the back*
-

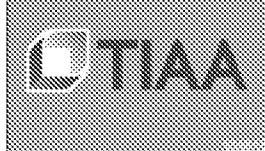
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NOUN

Definition of *substantially* in English:


substantially    

ADVERB

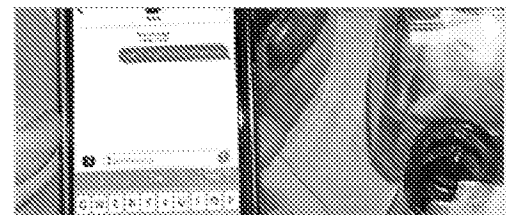
- 1 To a great or significant extent.
'profits grew substantially'
[as submodifier] 'substantially higher pension costs'
[More example sentences](#) [Synonyms](#)
- 2 For the most part; essentially.
'things will remain substantially the same over the next ten years'
[More example sentences](#) [Synonyms](#)

Pronunciation

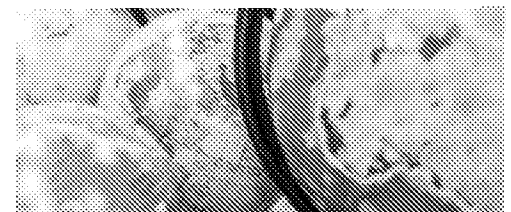
substantially /səbˈstʌnʃ(ə)li/



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unfolded

x

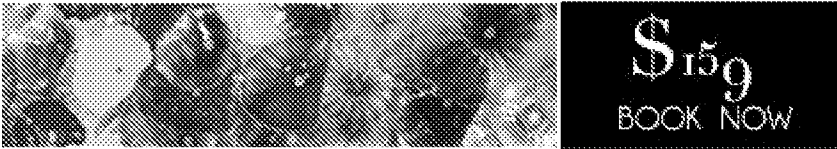
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unfolded

[play](#)
adjective un·fold·ed \,ən-ˈfōl-dəd\
Popularity: Bottom 20% of words

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-

Definition of *unfolded*

1. : not folded

1683

First Known Use of *unfolded*

1683



Learn More about *unfolded*

1. Nglish: [Translation of *unfolded* for Spanish speakers](#) Britannica English: [Translation of *unfolded* for Arabic speakers](#)

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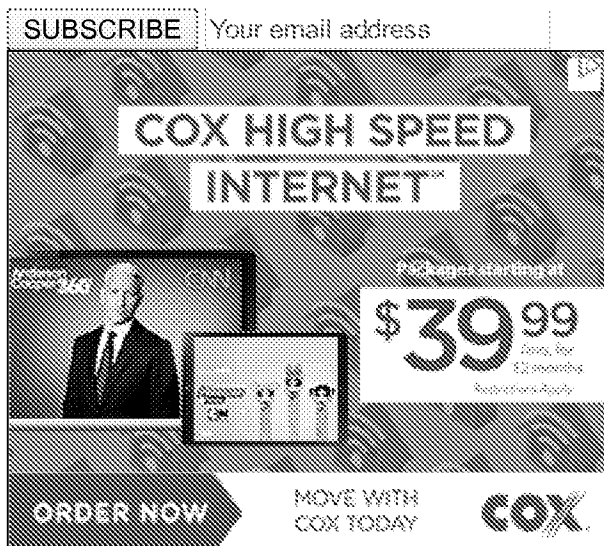
hackle

play

a hair or feather on the neck

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1. Erin go bragh An expression of loyalty that means "Ireland forever"
2. transom 'Over the transom'
3. gyro Look it up
4. wiretap 'To tap a telephone or telegram wire in order to get information'
5. complicit 'She's beautiful...she's powerful...she's complicit'

SEE ALL

Words at Play



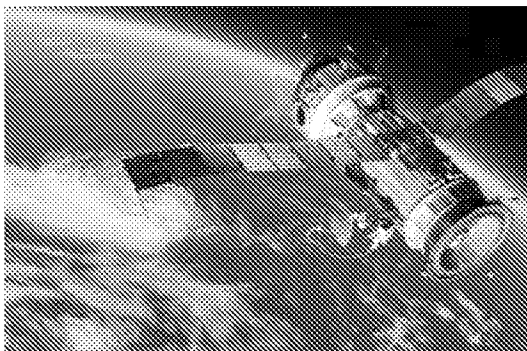
Tulip/Turban, Cloak/Clock, & 8 Other Doublets

When two words come from the same source



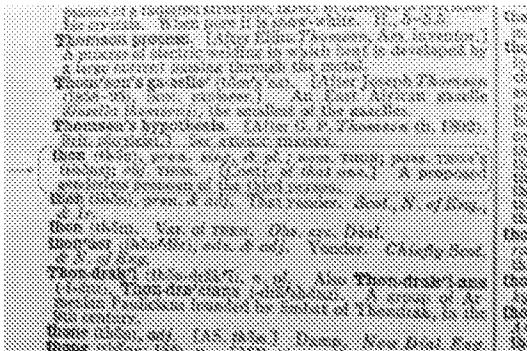
What's the Difference Between Sympathy and Empathy?

You don't know how it feels



'Whereabouts': Is it Singular or Plural?

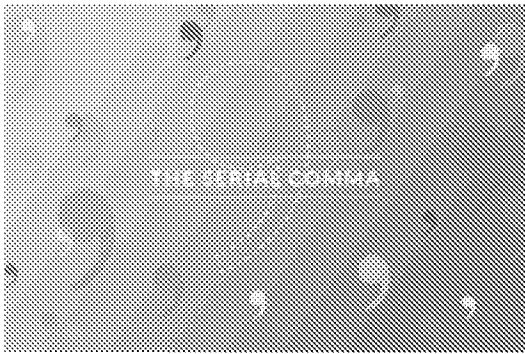
Don't let the '-s' fool you. Or do.



We Added a Gender-Neutral Pronoun in 1934. Why Have So Few People Heard of It?

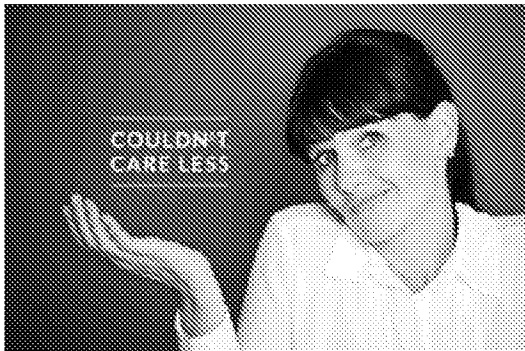
Whatever happened to 'thon'?

Ask the Editors



The Serial Comma

Why don't they call it the Merriam-Webster comma?



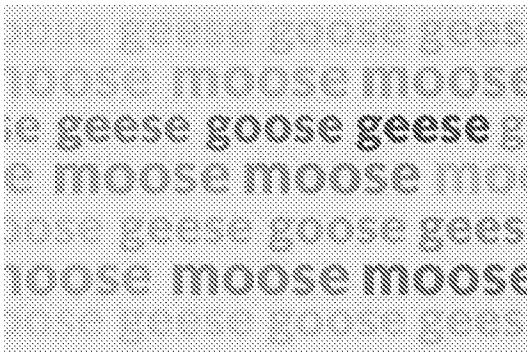
Is it 'I Could Care Less' or 'I Couldn't Care Less'?

Because we care



Irregardless

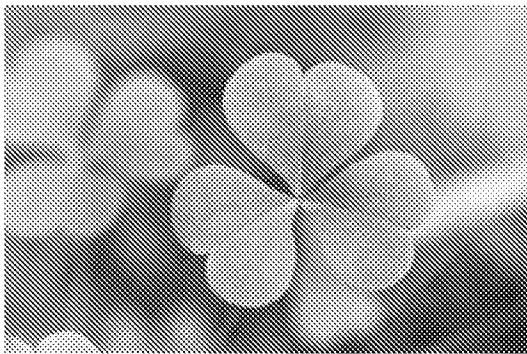
It is in fact a real word (but that doesn't mean you should use it).



Weird Plurals

One goose, two geese. One moose, two... moose. What's up with that?

Word Games



It's A Not Easy Green Quiz

How many questions can you answer about the word green?

Take the quiz



Slippery Words Quiz—Changing with the Times

Do you know these earlier meanings of words?

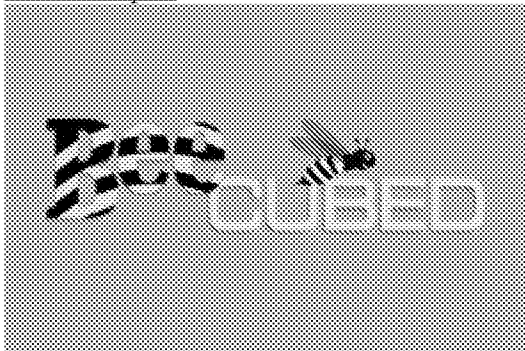
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